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# AUSTRALIA

## Patents Act 1990

**ARISTOCRAT LEISURE INDUSTRIES PTY LTD**

### PROVISIONAL SPECIFICATION

*Invention Title:*

AUSTRALIAN	
PROVISIONAL NO.	DATE OF FILING
P09090	-9 SEP. 97
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*Slot machine game - Hyperlink progressive jackpot*

The invention is described in the following statement:

## *Slot machine game - Hyperlink progressive jackpot*

### **Introduction**

The present invention relates to apparatus for use with a system of linked poker machines and in particular the apparatus provides an improved mystery jackpot mechanism for use with such a poker machine system.

### 5 **Background of the Invention**

Many schemes have been devised in the past to induce players to play slot machines including schemes such as specifying periods during which jackpot prizes are increased or bonus jackpots paid. Other schemes involve awarding an additional prize to a first player to achieve a  
10 predetermined combination on a poker machine after a given point in time. These methods, while effective, add to club overheads because of the need for additional staff to ensure that the scheme is operated smoothly. More recently, with the advent of poker machines linked through electrical networks it has been possible to automatically generate jackpot prizes on the  
15 basis of information received from the machines being played which are connected to the system and one such prior art arrangement, commonly known as "Cashcade", counts turnover (or games played) on all machines in the network, increments a prize value in accordance with the turnover (or number of games played) and pays a mystery jackpot prize when the count  
20 reaches some predetermined and randomly selected number. In a more recent prior art arrangement, each game played on each machine in a gaming system is allocated a randomly selected number and the prize is awarded to a machine when the game number it is allocated matches a preselected random number.

25 In another recent prior art arrangement, the winning machine is selected by randomly selecting a number at a point in time and decrementing the number as games played on the system are counted until the number is decremented to zero at which time the game (or associated machine) causing the final decrement is awarded the jackpot.

30 With some of these prior art arrangements there is a serious disadvantage in that the player betting a single token per line, is just as likely to achieve a progressive jackpot as the player playing multiple tokens per line. This has the effect of encouraging players playing for the progressive

Progressive jackpot games have traditionally been popular in Casinos. Their main attraction has undoubtedly been their massive jackpot amounts, which are accessible to players on all gambling budgets. However, in their conventional format these games have obvious limitations:

- 5 (i) Standard symbol-based triggers (eg five 7's) are perceived by many players as being unattainable. These triggers for the grand jackpot are never seen by most players. Anecdotal evidence suggests that many players are realistically playing for the lesser jackpots on multilevel progressives (eg major, minor and mini jackpots). The increasing popularity of Cashcade  
10 jackpots supports this argument;
- (ii) Due to the increasing demand of players for a more complex and diverse game range, conventional progressive games with symbol-based triggers have become superseded. However, it is extremely complex to develop a wide variety of combinations which support both a feature game  
15 and mathematically exact triggers.
- (iii) Typically, it would be expected that as more coins are bet per line the return to player (RTP) would increase. In fact the reverse is true, because the player playing more coins is at a relative disadvantage as far as RTP is concerned. Lets say the start-up amount for a progressive jackpot is  
20 \$10000. A player who is playing 1 credit/ 1 line gets \$10000 for each credit played, whereas a player playing 5 credits/ 1 line only gets \$2000 for each credit played. Hence a law of diminishing returns. So, the smart player who gambles for the progressive only will always cover all playlines, but will only bet 1 credit per line because the progressive amount paid is the same  
25 irrespective of the bet. This is supported by data collected from Sky City Casino in Auckland, where the mean bet per line has been found to be 1.10 credits.

It could be expected therefore, that turnover would be significantly decreased without any multiplication of bet per line. Empirical data suggests  
30 that as much as 55% of total turnover is obtained from bets higher than 1 credit per line on \$0.05 20 line games.

These arrangements have been in use in the State of New South Wales and in other jurisdictions for a considerable period of time, however, as with other aspects of slot machine games, players become bored with such  
35 arrangements and new and more innovative schemes become necessary in order to stimulate player interest.

In this specification, the term "combinations" will be used to refer to the mathematical definition of a particular game. That is to say, the combinations of a game are the probabilities of each possible outcome for that game.

5 **Summary of the Invention**

According to a first aspect, the present invention provides a random prize awarding system associated with one or more gaming consoles each of which includes signal output means arranged to produce an output signal in response to operation of the respective console, each of the one or more  
10 gaming consoles being arranged to play a first game or a second game, the first game being a standard game normally offered on the machine and the second game being a jackpot game offered for play when the player has achieved a trigger condition, and trigger means arranged to test for the trigger condition and to initiate an instance of the second game when the trigger  
15 condition occurs, the trigger condition being determined by selecting a random number from a predetermined range of numbers to be associated with each bought game, and for each credit bet on the respective game, allocating to the player one number from the predetermined range of numbers, and in the event that one of the numbers allocated to the player  
20 matches the randomly selected number, indicating that the trigger condition has occurred.

According to a second aspect, the present invention provides a method of awarding a random prize associated with one or more gaming consoles each of which includes signal output means arranged to produce an  
25 output signal in response to operation of the respective console, each of the one or more gaming consoles being arranged to play a first game or a second game, the first game being a standard game normally offered on the machine and the second game being a jackpot game offered for play when the player has achieved a trigger condition, the method including testing for a trigger  
30 condition and initiating an instance of the second game when the trigger condition occurs, the trigger condition being determined by selecting a random number from a predetermined range of numbers to be associated with each bought game, and for each credit bet on the respective game, allocating to the player one number from the predetermined range of  
35 numbers, and in the event that one of the numbers allocated to the player

matches the randomly selected number, indicating that the trigger condition has occurred.

In the preferred embodiment, the predetermined range is selected on the basis of casino turnover, expected jackpot amounts and jackpot frequencies and will equal the desired average turnover per machine between successive initiations of progressive jackpot games divided by the credit value for that machine. For example, if the progressive jackpot is to be played for an average every \$5,000 of turnover played and the credit value on the machine is \$0.05, then the number range will be 1 to 100,000 (ie, 50,000/0.05). In the preferred embodiment, the gaming machine will allocate the lowest numbers in the range to the player such that if the player plays 20 credits he will be allocated numbers 1-20 giving him a 1 in 5,000 chance of triggering a progressive jackpot second screen game.

Preferably, the second game is a simplified game having a higher probability of success than the first game. In a particularly preferred embodiment, the second game provides five reels with four different symbols on each reel and a jackpot is activated if after spinning the reels the same symbol appears on the win line of each reel. The symbols may be of equal value and equally weighted (ie, same number of instances) on each reel or alternatively, the prizes might be of different values (eg: different fractions of the pool) and the symbols have different weightings on at least one reel.

Preferably, the prize awarded in a jackpot game by the system of the present invention, is a monetary amount the value of which is incremented with each game played on each gaming machine or console in the system. Alternatively, the incrementation can take place on a per token bet basis.

Where used above, the term 'console' is used to indicate a gaming machine, a gaming terminal or other device arranged to be connected to a communications system and to provide a user gaming interface. In the following description, examples are given which are applicable to traditional slot machines, however the invention should be taken to include gaming systems which include user interfaces other than traditional slot machines.

#### **Brief Description of the Drawings**

Embodiments of the invention will now be described by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a block diagram of a network of electronic gaming machines to which a mystery jackpot controller according to the present invention is connected;

5 Figure 2 is a flow chart showing a game arrangement according to the invention; and

Figure 3 shows an example of a 5 reel by 3 line window display.

### **Detailed Description of the Preferred Embodiments**

In a preferred embodiment of the invention, a new progressive combination provides the Casino operator with a far higher degree of flexibility. This Link Progressive System is innovative in its progressive approach, and intuitively seeks to "adrenalize" the punter. Unlike conventional symbol-based progressive combinations, the jackpots are won from a second screen feature. The second screen feature is triggered randomly as a function of turnover. When a progressive feature is triggered, a second screen feature game appears. Each progressive jackpot can only be won from this feature game. A second set of reel strips appears and a "spin and hold" feature game commences. When or if 5 symbols of the same type appear in the window, then the corresponding progressive jackpot is won. Of course it will be the mini and minor jackpots which attract the majority of hits. These are typically rapid jackpots with high increment rates and provide extra incentive to keep player interest on these machines.

Progressive jackpots in this format would have obvious advantages to both player and Casino operator:

(i) The relative disadvantage of the multiplier game in progressive jackpots is eliminated. Playing 20 lines/ 10 credits bet per line will produce ten times as many hits into the second screen progressive feature than 20 lines/ 1 credit bet per line. This is due to the use of a random trigger as a function of turnover, instead of using conventional symbol-based triggers.

(ii) The ability to develop a link progressive game using any existing game combination within an installation, once the game has been bundled with the Hyperlink progressive feature game. This will allow for the linking of combinations between platforms, denominations, different number of lines etc. Progressive games can now be developed using combinations as the base game which were previously unsuitable for Link Progressive Systems, which will compete with the appeal of the latest games on the market. This also addresses the problems of developing progressive

combinations which will always be limited by the need for common triggers. New variations of these games allow for generous progressive contributions (eg 75% base games with 20% progressive contributions).

5 (iii) The link progressive system can be used across a wide-area-network (WAN). Combinations, not meeting specified performance criteria can easily be changed to more proven performers.

(iv) The introduction of a feature game which produces what can only be described as the "adrenaline rush" - the gambler's natural high. This psyche has been critical to the success of the most successful prior art games.

10 (v) Preferably, when a second screen progressive feature is triggered, a bell sound announces to all of the surrounding players that a possible grand jackpot is about to be played for and is designed so that everyone can share in the experience of a progressive win. The rationale behind this, is that progressive jackpots are only ever seen after the prize has  
15 been won. Anecdotal evidence of players watching feature games being played in Australian casinos, suggests the drawing power of such games is very real.

Referring to Figure 1 a plurality of electronic gaming consoles 10 are connected to a network 11, to which a mystery jackpot controller 12 and  
20 display means 13 are also connected.

Each of the electronic gaming consoles 10 are provided with a network interface arranged to provide a signal onto the network 11 on each occurrence of an operation of a respective console and the jackpot controller 12 is arranged to receive each of the console operation signals and to  
25 increment the value of a random jackpot prize on the occurrence of each of these operation signals.

A flow chart for a prize awarding algorithm is illustrated in Figure 2.

Referring to the algorithm of Figure 2, machine contributions go into the prize pool as with known prior art jackpot systems, while the overhead  
30 display shows the incrementing prize value.

In step 20 the controller sets up an average value of machine turnover to be used to randomly generate trigger data for the link progressive games. The actual number range and therefore probability of a link feature game being awarded will depend upon the value of a credit in the particular  
35 machine and is calculated by dividing the turnover value by the value of a credit (eg.,  $\$5000/\$0.05 = 100,000$ ). The average turnover value may be fixed



for the system but may be varied from time to time by the system manager. For every game that is played, a random trigger value is selected in the range determined from the average turnover value. The player is also allocated numbers from the source range of numbers that the random number is  
5 selected from one number in the range being allocated for each credit bet such that the player's probability of being awarded a second screen game is proportional to the bet. The game is then reported (step 22) to the controller which allocates a contribution to the prize pool and compares the trigger value with the values allocated to the player (step 23), if there is a match  
10 between the trigger value and the player values (step 24), the player is given an opportunity to play a second screen jackpot game (step 25). If a jackpot is awarded as a result of the second screen game, the winning machine is locked up (step 28) and the controller awaits an indication that the prize has been paid and the machine unlocked (step 29) before returning to step 22. If  
15 the trigger value does not match then there is no link progressive game awarded for that bought game and the controller returns to step 22 and waits for the next console to report operation.

By way of example, a second screen feature game might be triggered by an EGM every \$5000 of turnover played, which is equivalent to 100,000  
20 credits on a \$0.05 machine. A random number is generated within a prescribed range of numbers at the EGM at the commencement of each bought game. The prescribed range of numbers have been determined previously, having been calculated from the casino turnover, expected jackpot amounts and jackpot frequencies. The prescribed range in this  
25 example is therefore 1 to 100,000 and before the commencement of each bought game a random number is generated within this range. A bet of 20 credits will include or "cover" the numbers between 1 and 20 (inclusive). If the number 7 is produced by the random number generator, then the second screen feature game will be triggered. If any number between 21 and 100,000  
30 is produced by the random number generator, the second screen feature game will not be triggered. Similarly, a bet of 200 credits will include or cover the numbers between 1 and 200 (inclusive). If any number between 1 and 200 is produced by the random number generator, then the second screen feature game will be triggered. If any number between 201 and  
35 100,000 is produced by the random number generator, the second screen feature game will not be triggered.

The example below has been developed using turnover data from an existing casino. A trigger of the second screen feature game is expected every \$5884.22 of turnover (ie, 117684 credits on a \$0.05 machine).

- 5 Increasing the number of credits bet increases the chance of triggering the feature on any bought game.

Number of credits bet	Range numbers assigned	Games to hit	Bet/game	Turnover of EGM since last hit (\$)
1	1 to 1	117684.42	\$0.05	\$5884.22
2	1 to 2	58842.21	\$0.10	\$5884.22
3	1 to 3	39228.14	\$0.15	\$5884.22
5	1 to 5	23536.88	\$0.25	\$5884.22
10	1 to 10	11768.44	\$0.50	\$5884.22
15	1 to 15	7845.63	\$0.75	\$5884.22
20	1 to 20	5884.22	\$1.00	\$5884.22
25	1 to 25	4707.38	\$1.25	\$5884.22
30	1 to 30	3922.82	\$1.50	\$5884.22
40	1 to 40	2942.11	\$2.00	\$5884.22
45	1 to 45	2615.21	\$2.25	\$5884.22
50	1 to 50	2353.69	\$2.50	\$5884.22
60	1 to 60	1961.41	\$3.00	\$5884.22
75	1 to 75	1569.13	\$3.75	\$5884.22
100	1 to 100	1176.84	\$5.00	\$5884.22
150	1 to 150	784.56	\$7.50	\$5884.22
200	1 to 200	588.42	\$10.00	\$5884.22

- 10 A jackpot bell set to a default maximum volume level (ie setting 15) will signal the triggering of a second feature game. The jackpot bell should last for a maximum of 3 seconds. Players are alerted by the jackpot bell instantaneously at any point during a game, but the second screen feature game will not appear until the current game (including base game features) are completed.

- 15 The second screen feature game appears with the new reel strips already spinning and accompanying feature game tunes playing. The player stops the reels spinning by pressing the corresponding playline buttons in

order. A time limit of 60 seconds is given before the reels become automated and stop themselves. An egg timer located on the background bevel displays the time remaining. The score for the progressive prize is determined by the total of the points "spun-up" on the centre line of all 5 reels. Across the top  
 5 of the screen, a sum of the scores displayed on each reel should be displayed. The 4 progressive meters in descending order of value are:

- (i) Grand Progressive. A score of  $\geq 100$  wins the grand progressive jackpot;
- (ii) Major Progressive. A score of 90-99 (inclusive) wins the major progressive jackpot;
- 10 (iii) Minor Progressive. A score of 80-89 (inclusive) wins the minor progressive jackpot;
- (iv) Mini Progressive. A score of  $\leq 79$  wins the mini progressive jackpot.

The lowest 5 reel score possible is 40.

By way of example, referring to Figure 3, a 5 reel by 3 line window is  
 15 displayed. If the reels of the second screen feature game stop on the numbers shown above, then the progressive jackpot won is the sum of the numbers on the centre line ie,  $12+10+18+13+22 = 75$  which is within the range for the mini progressive jackpot.

The instant the second feature game is completed and the sum of scores  
 20 from all 5 reels is shown, the progressive jackpot sign should display which jackpot has been won. This celebration of the jackpot win should be conducted in a traditional manner (ie flashing displays, jackpot alarms, music etc).

The expected jackpots for each progressive are turnover dependent.  
 25 The jackpot frequencies are arbitrarily set to satisfy the specific needs of each casino. Therefore, both expected jackpot and jackpot frequency are installation specific and of course will change from casino to casino.

As the time between jackpot game awards is related to turnover, the number of jackpot games played by a player and hence their chance of  
 30 winning is directly related to the size of each bet on each game played.

(1) All machines on the link have a 2nd screen game, be it an animation game or a second set of reel strips.

(2) The link has a number of progressive meters (up to 8). All progressives may be linked.

35 (3) The second screen game is activated when a machine has reached a predetermined dollar turnover. This is linked to the machine or a

controller. For example, the second screen is activated when (an average of) \$150 has been turned over. This means that whenever \$0 to \$300 has been turned over, the second screen appears. The benefit of activating the second screen on turnover enables mixed denomination on the link for the first time.

5 The second screen gives the player the chance of winning one of the 4 progressives if a certain outcome appears. For example, a new set of reel strips appear with only 4 different symbols: Jackpot 1, Jackpot 2, Jackpot 3, Jackpot 4. The first time 5 of the same appear on the centre line the stated progressive is won.

10 (4) Another advantage of awarding a progressive prize won in a second screen, is that it can be applied to any game.

It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments without departing from the spirit or scope of the  
15 invention as broadly described. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.

DATED this ninth day of September 1997

ARISTOCRAT LEISURE INDUSTRIES  
PTY LTD

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**ABSTRACT**

A plurality of electronic gaming machines 10 are connected to a network 11, to which a link progressive jackpot controller 12 and display means 13 are also connected. Each of the electronic gaming machines 10 are provided with a network interface arranged to provide a signal onto the network 11 on each occurrence of an operation of a respective machine and the jackpot controller 12 is arranged to receive each of the machine operation signals and to increment the value of a random jackpot prize on the occurrence of each of these operation signals. Prior to each game, the gaming machine 10 selects a random number from a range of numbers and during each game, the machine allocates the first  $n$  numbers in the range, where  $n$  is the number of credits bet by the player in that game. At the end of the game, the randomly selected number is compared with the numbers allocated to the player and if a match occurs the particular machine is switched into a second screen mode in which a jackpot game is played for the incremented jackpot

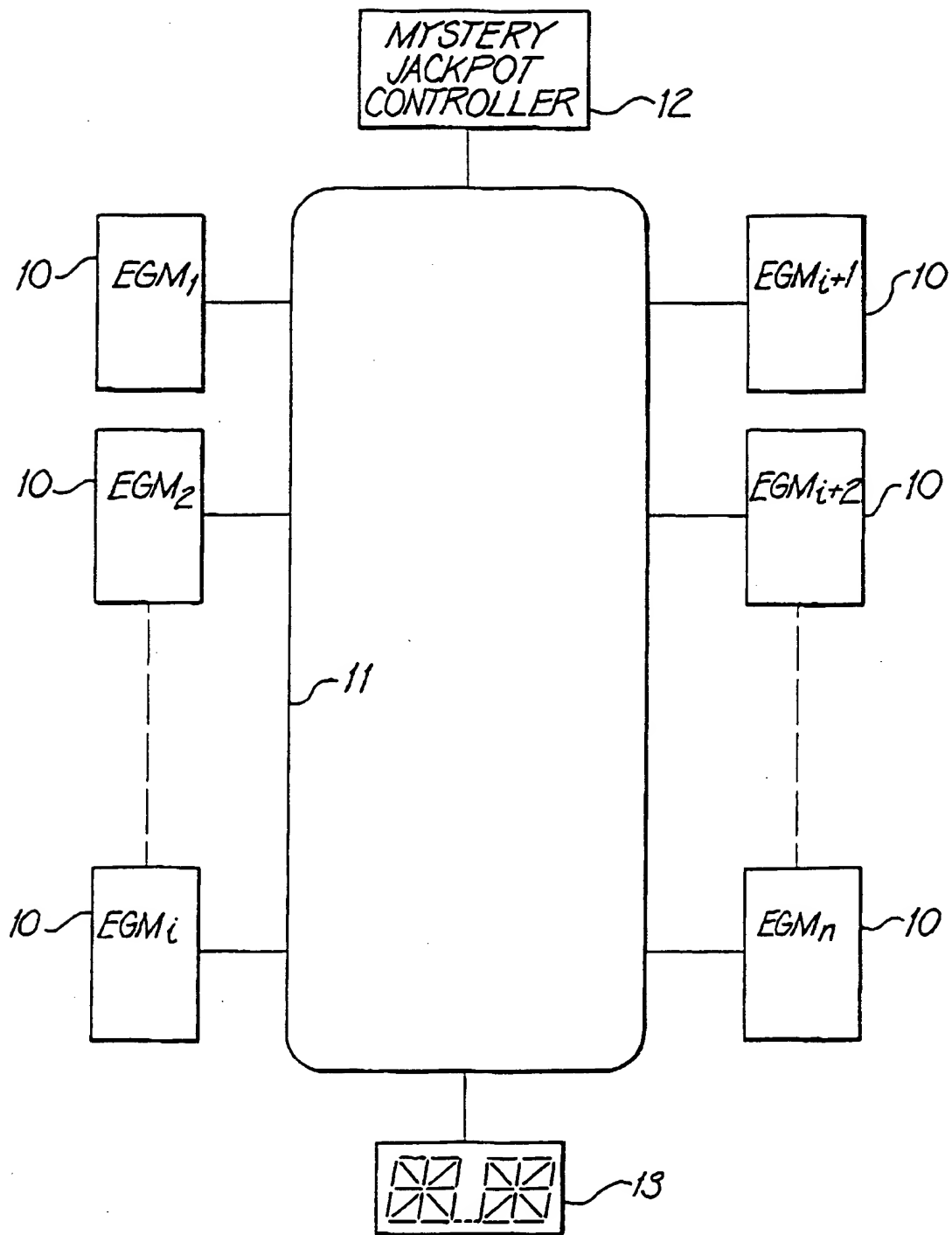


FIG. 1

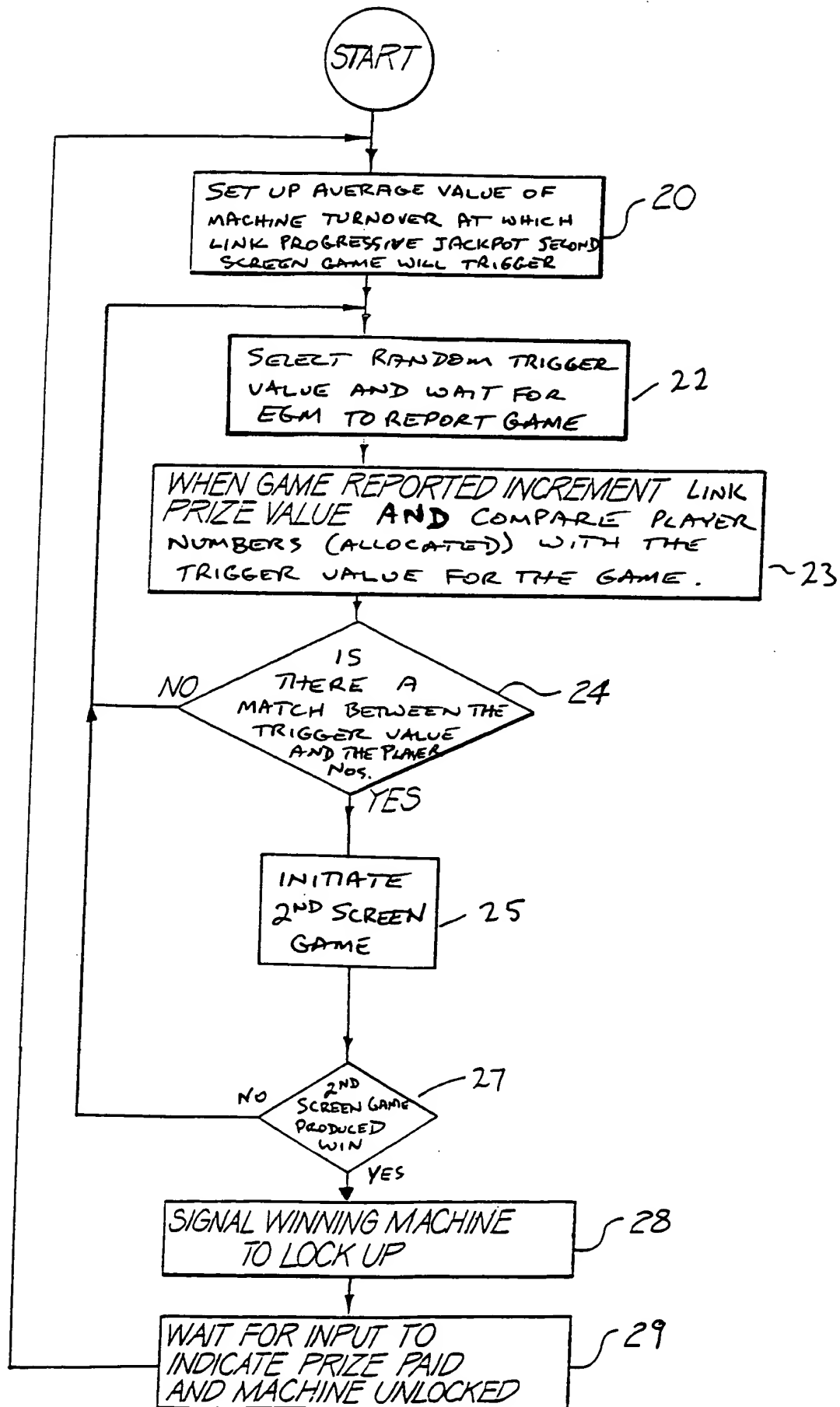


FIG. 2

20	11	11	3	7
12	10	18	13	22
9	12	13	24	9

Figure 3



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